

WE CLAIM:

1. A disk drive comprising:

(a) a disk;

(b) a head actuated radially over the disk; and

(c) a spindle motor for rotating the disk, the spindle motor comprising:

a stator comprising at least one stator coil wrapped around a stator tooth;

a hub rotated by the stator when current is applied to the stator coil; and

a locking spring arm having a fixed base, wherein:

the locking spring arm engages the hub when no current is applied to the stator coil; and

the locking spring arm disengages from the hub when current applied to the stator coil generates a magnetic flux which pulls the locking spring arm away from the hub.

2. The disk drive as recited in claim 1, wherein the locking spring arm comprises a magnetic material for interacting with the magnetic flux.

3. The disk drive as recited in claim 1, wherein the locking spring arm comprises a rubber material for engaging the hub.

4. The disk drive as recited in claim 1, wherein the locking spring arm comprises a spring material for biasing the locking spring arm toward the hub.

5. The disk drive as recited in claim 1, wherein the locking spring arm is non-elastic so that the locking spring arm remains disengaged from the hub when the current applied to the stator coil is turned off.

6. The disk drive as recited in claim 1, wherein the locking spring arm comprises a substantially arcuate shape corresponding to an arcuate shape of the spindle motor.

- 1 7. The disk drive as recited in claim 1, wherein the locking spring arm comprises a
2 substantially circular shape corresponding to a circular shape of the spindle motor.

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1 8. A spindle motor for use in rotating a disk in a disk drive, the spindle motor comprising:

2 (a) a stator comprising at least one stator coil wrapped around a stator tooth;

3 (b) a hub rotated by the stator when current is applied to the stator coil; and

4 (c) a locking spring arm having a fixed base, wherein:

5 the locking spring arm engages the hub when no current is applied to the stator
6 coil; and

7 the locking spring arm disengages from the hub when current applied to the stator
8 coil generates a magnetic flux which pulls the locking spring arm away from
9 the hub.

1 9. The spindle motor as recited in claim 8, wherein the locking spring arm comprises a
2 magnetic material for interacting with the magnetic flux.

1 10. The spindle motor as recited in claim 8, wherein the locking spring arm comprises a rubber
2 material for engaging the hub.

1 11. The spindle motor as recited in claim 8, wherein the locking spring arm comprises a spring
2 material for biasing the locking spring arm toward the hub.

1 12. The spindle motor as recited in claim 8, wherein the locking spring arm is non-elastic so
2 that the locking spring arm remains disengaged from the hub when the current applied to
3 the stator coil is turned off.

1 13. The spindle motor as recited in claim 8, wherein the locking spring arm comprises a
2 substantially arcuate shape corresponding to an arcuate shape of the spindle motor.

1 14. The spindle motor as recited in claim 8, wherein the locking spring arm comprises a
2 substantially circular shape corresponding to a circular shape of the spindle motor.